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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,359	03/02/2004	Kenneth Roger Jones	1033-MS1024	8966
84326 7590 11/20/2009 AT & T LEGAL DEPARTMENT - Toler ATTN: PATENT DOCKETING ROOM 2A-207 ONE AT & T WAY BEDMINISTER, NJ 07921				
EXAMINER				
BOKHARI, SYED M				
ART UNIT		PAPER NUMBER		
2473				
MAIL DATE		DELIVERY MODE		
11/20/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,359

Applicant(s)

JONES ET AL.

Examiner

SYED BOKHARI

Art Unit

2473

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-8, 10-15, 17, 20-22, 24-29, 31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10-15, 17, 20-22, 24-29, 31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant amendment filed on September 14th, 2009 has been entered. Claims 1-3, 6-8, 10-15, 17, 20-22, 24-29, 31 and 32 are still pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1).

Mamakos et al. disclose document describes the PPP Over Ethernet encapsulation that is being deployed by RedBack Networks, RouterWare, UUNET and others with the following features: regarding claim 1, a method of identifying a device, the method comprising receiving a request to establish a Point to Point Protocol over Ethernet (PPPoE) session on behalf of a Local Area Network (LAN) side device that is a LAN node in a LAN that is in communicate with a router (Fig. on page 4, Ethernet payload for PPPoE, see "To provide a point-to-point connection over Ethernet, each PPP session must learn the Ethernet address of the remote peer, as well as establish a unique session identifier. PPPoE includes a discovery protocol that provides this" recited in section 1 paragraph 2 lines 1-6 and paragraph 3 lines 1-4), outputting from the router a PPPoE discovery stage packet that comprises a tag identifying the LAN side device (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADI packet MUST contain exactly one TAG of TAG_TYPE Service-Name, indicating the service the Host is requesting, and any number of other TAG types" recited in section 5.1 paragraph 1 lines 1-3 and

paragraph 2 lines 1-5), receiving an access concentrator packet responsive to the PPPoE discovery stage packet (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "when the Access Concentrator receives a PADI that it can serve, it replies by sending a PADO packet" recited in section 5.2 paragraph 1 lines 1-4), the access concentrator packet including the tag recognizing the tag in the access concentrator packet (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADO packet MUST contain one AC-Name TAG containing the Access Concentrator's name, a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers" recited in section 5.2 paragraph 2 lines 1-5), communicating the tag from the access concentrator packet to the LAN side device (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers. If the Access Concentrator can not serve the PADI it must not respond with a PADO" recited in section 5.2 paragraph 1 lines 1-4 and paragraph 2 lines 1-5), enabling a point to point protocol (PPP) session for the LAN side device identified as the requesting device of the PPP session (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADS packet contains exactly one TAG of TAG_TYPE Service-Name, indicating the service under which Access Concentrator has accepted the PPPoE session" recited in section

5.4 paragraph 1 lines 1-6 and paragraph 2 lines 1-3); regarding claim 2, wherein the PPPoE discovery stage packet comprises a PPPoE Active Discovery Initiation packet (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the Host sends the PADI packet with the DESTINATION_ADDR set to the broadcast address" recited in section 5.1 paragraph 1 lines 1-3); regarding claim 3, further comprising maintaining information associating the LAN side device with the tag and the different LAN side device with the different tag (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "entire PADI packet (including the PPPoE header) must not exceed 1484 octets so as to leave sufficient room for a relay agent to add a Relay-Session-Id TAG" recited in section 5.1 paragraph 1 lines 1-5); regarding claim 6, wherein the access concentrator packet comprises a PPPoE Active Discovery Offer packet and comprises the tag in an unmodified form (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADO packet must contain one AC-Name TAG containing the Access Concentrator's name, a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs" recited in section 5.1 paragraph 1 lines 1-5); regarding claim 7, wherein the tag complies with a Host-Unique TAG construct described in IETF RFC 2516 (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "PADO packet MUST contain one AC-Name TAG containing the Access Concentrator's name, a Service-Name TAG

identical to the one in the PADI, and any number of other Service-Name TAGs" recited in section 5.2 paragraph 2 lines 1-4).

Mamakos et al. do not disclose the following features: regarding claim 1, receiving a different request to establish a different PPPoE session on behalf of a different LAN side device, the different LAN side device at a different LAN node of the LAN and outputting a different PPPoE discovery stage packet that comprises a different tag identifying the different LAN side device and enabling a different Point to Point Protocol (PPP) session for the different LAN side device identified as the requesting device of different PPP session.

Hossain et al. disclose a communication system for translating data communications from a WLAN using PPPoE to a PPP format with the following features: regarding claim 1, receiving a different request to establish a different PPPoE session on behalf of a different LAN side device, the different LAN side device at a different LAN node of the LAN (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see "the access concentrator receives the message 302 from any one of plurality of clients of WLAN 140 of fig. 1" recited in paragraph 0037 lines 1-12 and paragraph 0044 lines 7-15) and outputting from a router a different PPPoE discovery stage packet that comprises a different tag identifying the different LAN side device (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see "the APC 142 responses to the message and uniquely identifies the PPPoE data session 311 " recited in paragraph 0037 lines 15-38 and paragraph 0044 lines 7-15) and enabling a different Point to Point Protocol (PPP)

session for the different LAN side device identified as the requesting device of different PPP session (Fig. 1, a method for translating a data frame, the method comprising the steps of: a. receiving a Point-to-Point Protocol (PPP) over Ethernet (PPPoE) data frame; and b. translating the PPPoE data frame into a PPP over Generic Routing Encapsulation (GRE) data frame, see "Since a number of different users are sharing the same physical connection to the remote service provider, a way is needed to keep track of which user traffic should go to and which user should be billed. PPPoE provides for each user-remote site session to learn each other's network addresses" recited in paragraph 0018 lines 1-13).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. by sing the features, as taught by Hossain et al., in order to provide receiving a different request to establish a different PPPoE session on behalf of a different LAN side device, the different LAN side device at a different LAN node of the LAN and outputting a different PPPoE discovery stage packet that comprises a different tag identifying the different LAN side device and enabling a different Point to Point Protocol (PPP) session for the different LAN side device identified as the requesting device of different PPP session. The motivation of using these functions is to enhance the system in a cost effective manner.

6. Claims 14-15, 20-22, 24, 29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP

over Ethernet (PPPoE)” in view of Hossain et al. (US 2004/0258028 A1) and further in view of Yusko et al. (US 2004/0001496 A1).

Mamakos et al. disclose the following features: regarding claim 14, a device identification system, comprising an access concentrator having a computing platform and an interface operable to facilitate a communicative coupling of a plurality of remote devices to the computing platform (Fig. on page 4, Ethernet payload for PPPoE, see “To provide a point-to-point connection over Ethernet, each PPP session must learn the Ethernet address of the remote peer, as well as establish a unique session identifier. PPPoE includes a discovery protocol that provides this” recited in section 1 paragraph 2 lines 1-6 and paragraph 3 lines 1-4), a Local Area Network (LAN) engine communicatively coupled to the interface and configured to recognize an identification tag in a packet included in a discovery stage of the PPP session output by a router, the identification tag identifying a subscriber LAN device communicating the packet via the first of the plurality of remote devices (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see “the PADI packet MUST contain exactly one TAG of TAG_TYPE Service-Name, indicating the service the Host is requesting, and any number of other TAG types” recited in section 5.1 paragraph 1 lines 1-3 and paragraph 2 lines 1-5), Wherein the subscriber LAN device is a LAN side device that is a LAN node in a LAN that is in communication with a router and is identified as the requesting device of the PPP session (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value)

construct, see "the PADS packet contains exactly one TAG of TAG_TYPE Service-Name, indicating the service under which Access Concentrator has accepted the PPPoE session" recited in section 5.4 paragraph 1 lines 1-6 and paragraph 2 lines 1-3), executing the computer-readable instruction to recognize an existence of the tag (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADO packet MUST contain one AC-Name TAG containing the Access Concentrator's name, a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers" recited in section 5.2 paragraph 2 lines 1-5), to identify device identification information contained in the tag and to update a memory associated with a Broadband Remote Access Server to acknowledge the device identification information (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers. If the Access Concentrator can not serve the PADI it must not respond with a PADO" recited in section 5.2 paragraph 1 lines 1-4 and paragraph 2 lines 1-5); regarding claim 15, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516 (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "PADO packet MUST contain one AC-Name TAG containing the Access Concentrator's name, a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs" recited in section 5.2

paragraph 2 lines 1-4); regarding claim 20, wherein the Broadband Remote Access Server communicatively coupled to the LAN engine and operable to maintain information representing the subscriber LAN device (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers. If the Access Concentrator can not serve the PADI it must not respond with a PADO" recited in section 5.2 paragraph 1 lines 1-4 and paragraph 2 lines 1-5); regarding claim 22, further comprising: associating the remote node with a subscriber; and maintaining subscriber information comprising an identification of the device and the different device (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs indicating other services that the Access Concentrator offers. If the Access Concentrator can not serve the PADI it must not respond with a PADO" recited in section 5.2 paragraph 1 lines 1-4 and paragraph 2 lines 1-5); regarding claim 21, a method of identifying remote devices comprising receiving a PPPoE packet from a router of a remote node at an access concentrator (Fig. on page 4, Ethernet payload for PPPoE, see "To provide a point-to-point connection over Ethernet, each PPP session must learn the Ethernet address of the remote peer, as well as establish a unique session identifier. PPPoE includes a discovery protocol that provides this" recited in section 1 paragraph 2 lines 1-6 and paragraph 3 lines 1-4), wherein the PPPoE packet comprises a tag including

information associated with a device communicating via the remote node (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADI packet MUST contain exactly one TAG of TAG_TYPE Service-Name, indicating the service the Host is requesting, and any number of other TAG types" recited in section 5.1 paragraph 1 lines 1-3 and paragraph 2 lines 1-5), wherein the device is selected from a group consisting of a computer, a wireless access point, a Universal Serial Bus device, a Voice over Internet Protocol telephone, a television, a Set Top Box, a refrigerator, a washing machine, and a home networking device (Fig. on page 4, Ethernet payload for PPPoE, see "When a Host wishes to initiate a PPPoE session, it must first perform Discovery to identify the Ethernet MAC address of the peer and establish a PPPoE SESSION_ID. While PPP defines a peer-to-peer relationship, Discovery is inherently a client-server relationship. In the Discovery process, a Host (the client) discovers an Access Concentrator (the server)" recited in section 3 paragraph 1 lines 1-13) and providing a broadband link at least partially a communicating network node and the remote node (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the PADS packet contains exactly one TAG of TAG_TYPE Service-Name, indicating the service under which Access Concentrator has accepted the PPPoE session" recited in section 5.4 paragraph 1 lines 1-6 and paragraph 2 lines 1-3); regarding claim 24, wherein the PPPoE packet comprises a PPPoE Active Discovery Initiation (PADI) packet (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see "the Host sends the PADI packet with the

DESTINATION_ADDR set to the broadcast address” recited in section 5.1 paragraph 1 lines 1-3); regarding claim 29, wherein the communication network node comprises a Broadband Remote Access Server (Fig. on page 4, Ethernet payload for PPPoE, see “When a Host wishes to initiate a PPPoE session, it must first perform Discovery to identify the Ethernet MAC address of the peer and establish a PPPoE SESSION_ID. While PPP defines a peer-to-peer relationship, Discovery is inherently a client-server relationship. In the Discovery process, a Host (the client) discovers an Access Concentrator (the server)” recited in section 3 paragraph 1 lines 1-13); regarding claim 31, wherein the tag comprises a sixteen-bit tag (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see “TAG-TYPE and TAG-LENGTH has 16 bits each” recited in section 5 paragraph 3 lines 1-2) and regarding claim 32, wherein the tag complies with a Host-Uniq TAG construct described in IETF RFC 2516 (Fig. on page 5, the PPPoE payload contains zero or more TAGs. A TAG is a TLV (type-length-value) construct, see “PADO packet MUST contain one AC-Name TAG containing the Access Concentrator’s name, a Service-Name TAG identical to the one in the PADI, and any number of other Service-Name TAGs” recited in section 5.2 paragraph 2 lines 1-4).

Hossain et al. disclose the following features: regarding claim 14, a second interface communicatively coupled to the computing platform, operable to facilitate an outputting of a collection of information representing a PPP session of a first of the plurality of remote devices (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see “once the radio links is established, in action 302, the

WLAN client 144 broadcasts a PPPoE Active Discovery Initiation (PPPoE PADI) message in order to inquire if there is any WLAN access concentrator available, such as for example the WLAN APC 142 and the WLAN client 144 responds back to the WLAN APC 142 with a PPPoE Active Discovery Request (PPPoE PADR) message, which represents the WLAN client 144 acceptance of the WLAN APC 142 to act as an access concentrator for the new WLAN data session" recited in paragraph 0044 lines 10-19), a different PPP session of a different one of the plurality of remote devices (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see "the access concentrator receives the message 302 from any one of plurality of clients of WLAN 140 of fig. 1" recited in paragraph 0037 lines 1-12 and paragraph 0044 lines 7-15), wherein the LAN engine is configured to recognize a different identification tag in a different packet included in a discovery stage of the different Point to Point Protocol (PPP) session that identifies a different subscriber LAN device communicating the different packet via a different one of the plurality of remote devices and is a LAN side device, the different LAN side device that is different LAN node in the LAN and is identified as the requesting device of different PPP session (Fig. 1, a method for translating a data frame, the method comprising the steps of: a. receiving a Point-to-Point Protocol (PPP) over Ethernet (PPPoE) data frame; and b. translating the PPPoE data frame into a PPP over Generic Routing Encapsulation (GRE) data frame, see "Since a number of different users are sharing the same physical connection to the remote service provider, a way is needed to keep track of which user traffic should go to and which user should be billed. PPPoE provides for each user-remote site session to learn each other's network

addresses" recited in paragraph 0018 lines 1-13); regarding claim 21, receiving another PPPoE packet from the router of the remote node and wherein the other PPPoE packet comprises a different tag including other information associated with a different device communicating via the remote node (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see "the APC 142 responds to the message and uniquely identifies the PPPoE data session 311 " recited in paragraph 0037 lines 15-38 and paragraph 0044 lines 7-15), wherein the device and the different are distinct LAN nodes in a LAN and are in communication with the router (Fig. 3, a nodal operation and signal flow diagram of a data communications network, see "the access concentrator receives the message 302 from any one of plurality of clients of WLAN 140 of fig. 1" recited in paragraph 0037 lines 1-12 and paragraph 0038 lines 1-8), wherein the different is identified as communicating via the remote node and requesting the different PPP session (Fig. 1, a method for translating a data frame, the method comprising the steps of: a. receiving a Point-to-Point Protocol (PPP) over Ethernet (PPPoE) data frame; and b. translating the PPPoE data frame into a PPP over Generic Routing Encapsulation (GRE) data frame, see "Since a number of different users are sharing the same physical connection to the remote service provider, a way is needed to keep track of which user traffic should go to and which user should be billed. PPPoE provides for each user-remote site session to learn each other's network addresses" recited in paragraph 0018 lines 1-13).

Mamakos et al. and Hossain et al. do not disclose the following features:
regarding claim 14, wherein the access concentrator comprises a cable modem

termination system and wherein the access concentrator comprises a digital subscriber line access multiplexer and wherein the LAN engine is at least partially embodied by a processor accessing a computer-readable medium having computer-readable instructions.

Yusko et al. disclose communication system for PPP auto-connect with the following features: regarding claim 14, wherein the access concentrator comprises a cable modem termination system (Fig. 1A-C, schematic diagrams illustrating an exemplary implementation of a distributed network having a CPE adapted to automatically establish a physical transport layer connection with an access concentrator, see "the access concentrator 112 comprises of DSL modem, cable modem and router etc." recited in paragraph 0021 lines 1-25) and wherein the access concentrator comprises a digital subscriber line access multiplexer (Fig. 1A-C, schematic diagrams illustrating an exemplary implementation of a distributed network having a CPE adapted to automatically establish a physical transport layer connection with an access concentrator, see "the access concentrator 106 comprises of DSL modem and DSLAM" recited in paragraph 0022 lines 1-12) and wherein the LAN engine is at least partially embodied by a processor accessing a computer-readable medium having computer-readable instructions (Fig. 2, a schematic diagram illustrating the customer premise access equipment of FIG. 1 in greater detail in accordance with at least one embodiment of the present invention, see "for processing data transmitted between a network device of a local area network and an access concentrator of a wide area network, a computer readable medium is provided in accordance with another

embodiment of the present invention. The computer readable medium comprises a set of executable instructions adapted to manipulate a processor" recited in paragraph 0012 lines 1-14.

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. by using the features, as taught by Yusko et al., in order to provide the access concentrator comprises a cable modem termination system and wherein the access concentrator comprises a digital subscriber line access multiplexer and wherein the LAN engine is at least partially embodied by a processor accessing a computer-readable medium having computer-readable instructions. The motivation of using these functions is to enhance the system in a cost effective manner.

7. Claims 8, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) as applied to claims 1 and 14 above, and further in view of Kortum et al. (US 2005/0166261 A1).

Mamakos et al. and Hossain et al. disclose the claimed limitations as described in the paragraph 5 above. Mamakos. and Hossain et al. do not disclose the following features: regarding claim 8, further comprising utilizing a PPPoE client executing at a node at least partially interconnecting a LAN to a wide area network node to generate the PPPoE discovery stage packet and regarding claim 12, wherein the router

comprises a modem device selected from the group consisting of an xDSL modem, a cable modem, a fixed wireless modem, and a satellite modem; regarding claim 17, further comprising the first of the plurality of remote devices, wherein the first of the plurality of remote devices comprises an xDSL modem.

Kortum et al. disclose communication system for network authentication of a data service offering with the following features: regarding claim 8, further comprising utilizing a PPPoE client executing at a node at least partially interconnecting a LAN to a wide area network node to generate the PPPoE discovery stage packet (Fig. 1, illustrating a flow diagram of technique 10 of authenticating an accessing device, see "xDSL modem, cable modem etc. are capable of executing PPPoE client" recited in paragraph 0013 lines 1-7) and regarding claim 12, further comprising utilizing a modem device to output the PPPoE discovery stage packet, wherein the modem device is selected from the group consisting of an xDSL modem, a cable modem, a fixed wireless modem, and a satellite modem (Fig. 1, illustrating a flow diagram of technique 10 of authenticating an accessing device, see "xDSL modem, cable modem etc. are capable of executing PPPoE client" recited in paragraph 0013 lines 1-7) and regarding claim 17, further comprising the first of the plurality of remote devices, wherein the first of the plurality of remote devices comprises an xDSL modem (Fig. 1, illustrating a flow diagram of technique 10 of authenticating an accessing device, see "xDSL modem, cable modem etc. are capable of executing PPPoE client" recited in paragraph 0013 lines 1-7).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. by using the

features, as taught by Kortum et al., in order to provide utilizing a PPPoE client executing at a node at least partially interconnecting a LAN to a wide area network node to generate the PPPoE discovery stage packet and utilizing a modem device to output the PPPoE discovery stage packet, wherein the modem device is selected from the group consisting of an xDSL modem, a cable modem, a fixed wireless modem, and a satellite modem. The motivation of using these functions is to enhance the system in a cost effective manner.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) as applied to claim 1 and further in view of Nassar (2004/0004968 A1).

Mamakos et al. and Hossain et al. disclose the claimed limitations as described in the paragraph 5 above. Mamakos et al. and Hossain et al. do not disclose the following features: regarding claim 10, further comprising disabling a Network Address Translation feature in connection with the PPP session.

Nassar disclose a communication system for dynamic simultaneous connection to multiple service providers with the following features: regarding claim 10, further comprising disabling a Network Address Translation feature in connection with the PPP session (Fig. 13, illustrating steps for terminating an application during an active

session, see "the router disable the NAT rule (step 1340)" recited in paragraph 0059 lines 1-16).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. by using the features, as taught by Nassar, in order to provide disabling a Network Address Translation feature in connection with the PPP session. The motivation of using this function is to enhance the system in a cost effective manner.

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) as applied to claim 1 and further in view of Tang et al. (US 2004/0059821 A1).

Mamakos et al. and Hossain et al. disclose the claimed limitations as described in the paragraph 5 above. Mamakos et al. and Hossain et al. do not disclose the following features: regarding claim 11, further comprising receiving the request via a connection type selected from the group consisting of an Ethernet link, an 802.11 (x) link, a Bluetooth link, a Universal Serial Bus link, and a power line networking link.

Tang et al. disclose a communication system for a point-to-point protocol bridge operating mode with the following features: regarding claim 11, further comprising receiving the request via a connection type selected from the group consisting of an Ethernet link, an 802.11 (x) link, a Bluetooth link, a Universal Serial Bus link, and a

power line networking link (Fig. 1, illustrating the overall data communication system, see "upon receiving the request of PPP session from a user terminal 101" recited in paragraph 0064 lines 1-10).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. by using the features, as taught by Tang et al., in order to provide receiving the request via a connection type selected from the group consisting of an Ethernet link, an 802.11 (x) link, a Bluetooth link, a Universal Serial Bus link, and a power line networking link. The motivation of using these functions is to enhance the system in a cost effective manner.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) and in view of Yusko et al. (US 2004/0001496 A1) as applied to claim 1 above, and further in view of Kortum et al. (US 2005/0166261 A1).

Mamakos et al., Hossain et al. and Yusko et al. disclose the claimed limitations as described in paragraphs 5 and 8 above. Yusko et al. also disclose the following features: regarding claim 13, communicatively coupling the modem device and a plurality of other modem devices to an access concentrator node of a wide area network (Fig. 1A-C, schematic diagrams illustrating an exemplary implementation of a distributed network having a CPE adapted to automatically establish a physical transport layer

connection with an access concentrator, see "the access concentrator 112 comprises of DSL modem, cable modem and router etc." recited in paragraph 0021 lines 1-25).

Mamakos et al., Hossain et al. and Yusko et al. do not disclose the following features: regarding claim 13, further comprising: utilizing a modem device to output the PPPoE discovery stage packet and the different PPPoE discovery stage packet.

Kortum et al. disclose the following feature: regarding claim 13, further comprising: utilizing a modem device to output the PPPoE discovery stage packet and the different PPPoE discovery stage packet (Fig. 1, illustrating a flow diagram of technique 10 of authenticating an accessing device, see "xDSL modem, cable modem etc. are capable of executing PPPoE client" recited in paragraph 0013 lines 1-7).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. and Yusko et al. by using the features as taught by Kortum et al., in order to provide further comprising: utilizing a modem device to output the PPPoE discovery stage packet and the different PPPoE discovery stage packet. The motivation of using this function is to enhance the system in a cost effective manner.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) and Adcox et al. (US 2003/0236916 A1) as applied to claim 21 and 22 above, and further in view of Zhang et al. (US 2007/0159971 A1).

Mamakos et al., Hossain et al. and Adcox et al. disclose the claimed limitations as described in paragraphs 5 and 7 above. Mamakos et al., Hossain et al. and Adcox et al. do not disclose the following features: regarding claim 25, further comprising: altering a cost of using the broadband link in response to recognizing an additional device communicating with the communication network node via the remote node.

Zhang et al. disclose a communication system for broadband access with great capacity with the following features: regarding claim 25, further comprising: altering a cost of using the broadband link in response to recognizing an additional device communicating with the communication network node via the remote node (Fig. 2, schematic diagram of the network architecture of high capacity subscriber access devices, see "the IP sharing among plurality of DSLAMs reduces the cost" recited in paragraph 0042 lines 1-14).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. and Adcox et al. by using the features, as taught by Zhang et al., in order to provide altering a cost of using the broadband link in response to recognizing an additional device communicating with the communication network node via the remote node. The motivation of using this function is to enhance the system in a cost effective manner.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in

view of Hossain et al. (US 2004/0258028 A1) and Adcox et al. (US 2003/0236916 A1) as applied to claim 21-22 above, and further in view of Adamczyk et al. (US 2005/0015494 A1).

Mamakos et al., Hossain et al. and Adcox et al. disclose the claimed limitations as described in paragraphs 5 and 7 above. Mamakos et al., Hossain et al. and Adcox et al. do not disclose the following features: regarding claim 26, further comprising considering the subscriber information in connection with generating a marketing offer presentable to the subscriber.

Adamczyk et al. disclose a communication system for managing quality of service with the following features: regarding claim 26, further comprising considering the subscriber information in connection with generating a marketing offer presentable to the subscriber available (Fig. 3, a block diagram illustrating the regional access network, see "upgrades to marketing categories and the providers extend the service offering" recited in paragraph 0007 lines 1-10 and paragraph 0456 lines 1-10).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. and Adcox et al. by using the features, as taught by Adamczyk et al., in order to provide considering the subscriber information in connection with generating a marketing offer presentable to the subscriber. The motivation of using this function is to enhance the system in a cost effective manner.

13. Claim 27 rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) and Adcox et al. (US 2003/0236916 A1) as applied to claim 21-22 above, and further in view of Angel et al. (US 2004/0044789 A1).

Mamakos et al., Hossain et al. and Adcox et al. disclose the claimed limitations as described in paragraphs 5 and 7 above. Mamakos et al., Hossain et al. and Adcox et al. do not disclose the following features: regarding claim 27, further comprising considering the subscriber information in connection with making a communication network planning decision.

Angel et al. disclose a communication system Dynamic service-aware aggregation of PPP sessions with the following features: regarding claim 27, further comprising considering the subscriber information in connection with making a communication network planning decision (Fig. 2B, illustrating an access network/transport configured by dynamic service selection, see "controlling user bandwidth consumption as well as for network planning and engineering" recited in paragraph 0100 lines 1-2).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. and Adcox et al. by using the features, as taught by Angel et al., in order to provide considering the subscriber information in connection with making a communication network planning

decision. The motivation of using this function is to enhance the system in a cost effective manner.

14. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over RFC2516 to Mamakos et al. "A method for transmitting PPP over Ethernet (PPPoE)" in view of Hossain et al. (US 2004/0258028 A1) and Adcox et al. (US 2003/0236916 A1) as applied to claim 21-22 above, and further in view of Pedersen et al. (2005/0025061 A1).

Mamakos et al., Hossain et al. and Adcox et al. disclose the claimed limitations as described in paragraphs 5 and 7 above. Mamakos et al., Hossain et al. and Adcox et al. do not disclose the following features: regarding claim 28, further comprising receiving a trouble-shooting request from the subscriber; and considering the subscriber information in connection with offering a suggestion responsive to the trouble-shooting request.

Pedersen disclose a communication system for link testing in an Ethernet DSL network with the following features: regarding claim 28, further comprising receiving a trouble-shooting request from the subscriber; and considering the subscriber information in connection with offering a suggestion responsive to the trouble-shooting request (Fig. 2, a simplified functional block diagram of the intermediate node illustrating its connections to the end nodes via different transmission media, see "a customer

complaint is received and the response to the complaint is sent" recited in abstract lines 6-11 and paragraph 007 lines 1-14).

It would have been obvious to one of the ordinary skill in the art at the time of invention to modify the system of Mamakos et al. with Hossain et al. and Adcox et al. by using the features, as taught by Pedersen et al., in order to provide comprising receiving a trouble-shooting request from the subscriber; and considering the subscriber information in connection with offering a suggestion responsive to the trouble-shooting request. The motivation of using this function is to enhance the system in a cost effective manner.

Response to Arguments

15. Applicant's arguments with respect to claims 1-3, 6-8, 10-15, 17, 20-22, 24-29, 31 and 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SYED BOKHARI whose telephone number is (571)270-3115. The examiner can normally be reached on Monday through Friday 8:00-17:00 Hrs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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